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ABSTRACT

This bulletin focuses on the connection between student performance and standards that has led to reform efforts designed to set high standards and develop new ways to measure student performance. It provides an overview of national, state, and local efforts to develop standards. The bulletin then discusses these practitioner-identified approaches to help build an education system that prepares all students for further education and work: incorporating career and employability skills in standards; linking academic and occupational skill standards; engaging the public and building political support; and professional development. A chart provides a summary of National Academic Content Standards and lists subject, developer(s), and contact information. Contact and address information for three effective practices administered by the New York State Education Department, Indiana Department of Workforce Development, and Massachusetts Department of Education is provided. The bulletin then lists 12 organizations that can provide further information on the topic. Brief summaries describe the organizations' focus and activities. Ten resource publications are listed. (YLB)

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★RESOURCE BULLETIN

JANUARY 1997

Academic Standards and School-to-Work

A great many reports and studies in recent years, commencing with *A Nation at Risk*, have documented the declining academic performance of American students. A number of these studies identified the lack of rigorous academic standards as a key determinant of the declining performance. Schools without standards have no explicit expectations for student achievement or learning--they certify how much time students have spent in class rather than what they have learned. The result is often poor performance from students locked in a self-fulfilling prophecy of low achievement.

There is ample evidence to suggest that when students are expected to learn clearly articulated academic content in a conducive learning environment, they will make far greater progress than students in a learning environment without standards. The connection between student performance and standards has led to reform efforts designed to set high standards and develop new ways to measure student performance. A key element of both the Goals 2000 and school-to-work initiatives, academic standards are expected to provide students, parents, community leaders, and employers with clear expectations of what all students should know and be able to do in specified academic disciplines. Coupled with the developing system of occupational skill standards, which specify the skills necessary in broadly defined occupational clusters, academic standards can provide clear goals for all students regarding the knowledge and skills necessary for productive employment and further education.

Three elements of a standards-based system--content standards, performance standards, and performance assessments--are essential in raising student achievement and easing the transition from school to work. *Content standards* are the cornerstone of a standards-based school-to-work system, specifying what students are expected to know and be able to do in certain disciplines at specified levels of their education. *Performance standards* identify the manner in which proficiency must be demonstrated and the expected levels of performance, determining "how good is good enough." Performance standards set the parameters for *performance assessment*, which provides indicators of student performance, including testing, observation, and documentation of student work over time. These assessments are used to provide measures of individual progress toward achieving standards, and are aggregated to determine performance at the school, district, and state levels.

This resource bulletin provides an overview of national, state and local efforts to develop standards and discusses approaches to developing a comprehensive education system that links efforts to develop standards and school-to-work systems.

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Brief Overview

National efforts to develop standards. In 1989, the National Council of Teachers of Mathematics (NCTM) published *Curriculum and Evaluation Standards for School Mathematics*, bringing voluntary national standards to the forefront of standards-based reform efforts. Generally, educators responded positively to the math standards, which have been widely accepted and integrated in curricula and assessments across the nation. Several national organizations have contributed to the development of science standards, including the National Committee on Science Education Standards and Assessment, the American Association for the Advancement of Science, and the National Science Teachers Association. The recently completed *National Science Education Standards*, developed by the National Research Council, is the centerpiece of science standards efforts. A variety of other disciplines have developed standards, and a guide to all national standards is included later in this bulletin.

State standards-based reform. State standards serve as a catalyst, providing local schools and districts with a focal point for their standards development, as well as related instruction and assessment issues. Several organizations, such as the U.S. Department of Education Office of Educational Research and Improvement, the Council of Chief State School Officers, and the American Federation of Teachers, have recently examined state academic content standards reform efforts. These studies determined that states' standards-based reforms vary widely in terms of scope, organization, structure and elements. Content standards, curriculum frameworks, core curriculum and other terms are used to articulate academic content standards. Researchers found that the main purpose of the state academic content standards was to provide guidance for local curriculum development, and to improve student and teacher accountability.

Many of the state standards include sections that provide educators with explanations, suggestions, models, and examples for using standards in curriculum development, teaching methods, and selection of materials. They also identify process or learning skills, such as problem solving, reasoning, and communication. A critical next step in developing a standards-based system is to develop assessments that reflect the new standards, but most states have just begun aligning standards and assessments.

Local standards. Several states require local districts to adhere to the state standards and curriculum frameworks. In many local districts, however, the tradition of local control of education remains strong. In these communities, citizens, educators, and business people are developing local standards, drawing upon national and state standards or standards developed by other school districts as models for their own work. Local districts are integrating their local preferences and characteristics with state and national efforts in order to create standards that are relevant for local teachers, students, and communities.

Approaches to Linking Standards and School-to-Work

Lasting change in our education system requires a comprehensive approach to reform, linking school-to-work and standards-based reform. The examination of standards development and school-to-work systems across the nation has led practitioners to identify the following approaches to help build a education system that prepares all students for further education and work.

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Incorporating career and employability skills in standards. While many standards-based reforms have focused exclusively on standards in academic disciplines, others have incorporated cross-disciplinary skills such as workplace readiness and problem-solving, and communication. Integrating cross-disciplinary skills, such as SCANS, into the core academic curriculum of K-12 education can foster the integration of academic and occupational curricula, encourage critical thinking and reasoning skills, and make standards-based reform efforts more coherent by linking the different disciplines.

The New York State Education Department has recently released *Preliminary Draft Framework for Career Development and Occupational Studies.* This preliminary draft was produced for review, giving the public an important opportunity to comment upon and provide input into the standards. One of seven sets of state standards, the document crosses academic disciplines, linking academic content and occupational skills. It entails three key elements; career development, integrated learning, and universal foundation skills/career options. For each element, the format includes an overview, performance indicators, and some examples of how students can demonstrate performance at various levels of achievement. In addition, the framework develops the concept of career majors for all students as a means of concurrently fostering academic and occupational knowledge and skills. The framework also contains sections devoted specifically to model programs and practices, and samples of student work, which will contain illustrations submitted by individuals in the state.

Linking academic and occupational skill standards. Individuals developing standards should recognize that students ultimately will need to be able to acquire skills that are specific to an occupational cluster, yet broad enough to ensure a range of career choices. 'Consequently, coordination between academic standards and occupational skill standards must occur to ensure that students can progress through career pathways that provide both the academic and occupational skills necessary for further education and work.

The National School-to-Work Office, in conjunction with the National Skill Standards Board, and the U.S. Department of Education's Office of Vocational and Adult Education, has implemented three "Building Linkages" projects to explore ways to integrate academic and industry-recognized skill standards in school-to-work systems. One of the projects, a consortium of 13 states led by the Indiana Department of Workforce Development, is developing a model to integrate academic and occupational skill standards in manufacturing. The model will provide a mechanism to identify and implement academic and industry-recognized skill standards, measure achievement, and document proficiency through a portable credential.

Engaging the public and building political support. Public support is critical to promoting understanding and acceptance of standards and school-to-work systems. Limiting the standards-building process to panels of experts and educators may result in sound standards, but without public support and buy-in, standards are unlikely to be accepted by local schools and the community.

The State of Massachusetts involved over 15,000 residents in the development of education goals for public school children. These goals, known collectively as the Common Core of Learning, were the foundation for the development of the state curriculum frameworks and will be the centerpiece of its standards-based systemic education reform.

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Professional development. Professional development is an essential aspect of systemic education reform based on standards. Simply adopting standards will not bring about the optimum teaching and learning conditions necessary to increase student performance. Standards-based reform requires educators to embrace the notion of academic excellence for all students and carry out new approaches to instruction. Teachers must be given time, encouragement, and opportunities to rethink teaching strategies, to learn new subject matter, and to stay current on the latest research in their fields. Professional development should be an ongoing and integral part of standards-based reform, not an add-on, and should be designed with the input of all partners in the system.

Summary of National Academic Content Standards

NATIONAL ACADEMIC CONTENT STANDARDS		
SUBJECT	**DEVELOPER(S)**	**CONTACT INFORMATION**
Arts	Consortium of National Arts Education Associations	Peggy Senko, Music Educators National Conference (703) 860-4000
Civics	Center for Civic Education	Margaret Branson, Center for Civic Education (818) 591-9321
Economics	National Council on Economic Education, and others	Robert Highsmith, National Council on Economic Education (212) 730-7007
English	National Council of Teachers of English, and the International Reading Association	Gail Keating, International Reading Association (302) 731-1600
Foreign Languages	American Council on the Teaching of Foreign Languages, and others	Jamie Draper, American Council on the Teaching of Foreign Languages (914) 963-8830
Geography	National Council for Geographic Education, and others	Heather Schofield, National Geographic Society (202) 775-7832
Health	American Cancer Society and a joint Health-Education Standards Committee	Becky Smith, Association for the Advancement of Health Education (703) 476-3441
History	National Center for History in Schools	Linda Symcox, National Center for History in Schools (310) 206-6093

NATIONAL ACADEMIC CONTENT STANDARDS		
Mathematics	**National Council of Teacher of Mathematics**	**Eileen Erickson, National Council of Teachers of Mathematics (703) 620-9840**
Physical Education	**National Association for Sport and Physical Education**	**Judith Young, National Association for Sport and Physical Education (703) 476-3461**
Science	**National Research Council**	**Patrice Legro, National Research Council (202) 334-1399**
Social Studies	**National Council for the Social Studies**	**Rose-Kathryn Young Chaisson, National Council for the Social Studies (202) 966-7840**

(For a more complete summary of national standards, see *Struggling for Standards,* Education Week Special Report, April 12, 1995.)

FOR MORE INFORMATION ABOUT THIS TOPIC, CONSULT THE FOLLOWING RESOURCES:

Effective Practices

New York State Education Department. Cynthia Laks, 89 Washington Avenue, Rm. 319EB, Albany, NY 12234 ★ (518) 474-4809.

Indiana Department of Workforce Development. Peggy O'Malley, 10 N. Senate Ave., SE, Rm. 302, Indiana Government Center, Indianapolis, IN 46204-2277 ★ (317) 232-1832.

Massachusetts Department of Education. Greg Nadeau, 350 Main Street, Malden, MA 02148 ★ (617) 388-3300.

Organizations

American Association for the Advancement of Science (AAAS) engages in a variety of activities to advance science and human progress. The AAAS is working towards science literacy for all citizens. Their Project 2061 is a long-term reform initiative with the goal of transforming K-12 science, mathematics and technology education to ensure science literacy for all high school graduates, stressing high standards for all students. 1333 H Street, NW, Washington, DC 20005 ★ (202) 326-6666.

American Federation of Teachers (AFT) is a labor union representing 875,000 members. The AFT has been actively involved in assisting with state and local standards development, analysis, and implementation. They have done this through various publications, tool kits, web page workshops, and awareness with their national campaign, "Lessons for Life," which calls for standards of discipline and

achievement for all students. 555 New Jersey Avenue, NW, Washington, DC 20001-2079 ★ (202) 879-4400 ★ Internet: http://www.aft.org.

Consortium for Policy Research in Education combines the work of five research institutions in a venture to improve student learning through research on education finance and policy. The Consortium is interested in how to improve policy coherence in the area of education reform and standards, and is publishing numerous papers concerning standards-based reform and early experiences in developing content standards. University of Pennsylvania, 3440 Market Street, Suite 560, Philadelphia, PA 19104-3325 ★ (215) 573-0700.

Council of Chief State School Officers (CCSSO) is a nationwide, nonprofit organization of the 57 public officials who head departments of public education in every state and several other jurisdictions. CCSSO seeks its members' consensus on major educational issues and expresses their views to civic and professional organizations, federal agencies, Congress, and the public. CCSSO has a number of programs focusing on standards, including the State Collaborative on Assessment and Student Standards. One Massachusetts Avenue, NW, Suite 700, Washington, DC 20001-1431 ★ (202) 408-5505.

Education Commission of the States is a nonprofit, nationwide interstate compact formed to help governors, state legislators, state education officials, and others develop policies to improve the quality of education at all levels. 707 17th Street, Suite 2700, Denver, CO 80202-3427 ★ (303) 299-3600.

National Alliance of Business (NAB) is a business-led nonprofit organization advancing business leadership at local, states, and national levels to increase workforce quality through improved education and training. NAB's Business Coalition for Education Reform has developed a Leadership Kit to assist businesses, educators, public officials, parents and community activists in developing world-class academic standards and support for education improvement in their local communities. 1201 New York Avenue, NW, Washington, DC 20005 ★ 1 (800) 787-2848.

National Committee on Science Education Standards and Assessment (NCSESA) of the National Research Council has recently issued the *National Science Education Standards*. The Standards are available from the National Academy Press. 2101 Constitution Avenue, NW, Washington, DC 20418 ★ (202) 334-2138.

National Council of Teachers of Mathematics produced "Curriculum and Evaluation Standards for School Mathematics," "Professional Standards for Teaching Mathematics," and "Assessment Standards for School Mathematics," in which standards are identified for all aspects of mathematics education, including assessment, evaluation of teaching, the support and development of mathematics teachers, curriculum and the appropriate use of technology. 1906 Association Drive, Reston, VA 22091-1593 ★ (703) 620-9840.

National Education Goals Panel works to achieve the National Education Goals created at the 1989 Education Summit in Charlottesville, Virginia. The Panel, consisting of Governors, Members of the Administration, Members of Congress, and State Legislators, is responsible for building national consensus for education improvements, and reporting promising actions at the national, state and local level to achieve the Goals. 1850 M Street, NW, Suite 270, Washington, DC 20036 n (202) 632-0952.

National Science Teachers Association (NSTA) is the largest organization in the world committed to the improvement of science education. The NSTA's major science curriculum reform project for

grades 9-12, *Scope, Sequence, and Coordination of Secondary School Science* has been piloted in schools across the country. 1840 Wilson Blvd., Arlington, VA 2201-3000 n (703) 243-7100.

New Standards is a grassroots partnership of states and urban school districts that is adopting a set of high education standards and developing a new kind of assessment system to monitor student progress toward those standards. The primary goal of New Standards is to improve the academic performance of all students. 700 Eleventh Street, NW, Suite 750, Washington, DC 20001 ★ (202) 783-3668.

The **Putnam Valley Schools,** Putnam Valley, NY Internet home page has developed an annotated list of sites which have educational standards documents prepared by various states and professional organizations. The section of their home page devoted to standards, Developing Educational Standards, provides an overview of standards development, and developments categorized by subject and by state. Internet: http://putwest.boces.org/Standards.html

Publications

American Federation of Teachers. *Making Standards Matter.* Washington, DC: American Federation of Teachers, 1995.

American Federation of Teachers. *Setting Strong Standards.* Washington, DC: American Federation of Teachers, 1995.

Blank, Rolf K., and Ellen M. Pechman. *State Curriculum Frameworks in Mathematics and Science: How are They Changing Across The States?* Washington, DC: Council of Chief State School Officers, 1995.

Colorado Department of Education. *Pioneering Standards: Early Results in Colorado Schools.* Denver, CO: Colorado Department of Education, 1995.

Education Commission of the States. *ECS Winter Workshop on Connecting Learning and Work and Standards, Assessment and Accountability.* Denver, CO: Education Commission of the States, 1996.

Education Week. *Struggling for Standards.* Washington, DC: Education Week, April 12, 1995.

The National Commission on Excellence in Education. *A Nation at Risk: The Imperative for Educational Reform.* Washington, DC: The National Commission on Excellence in Education, 1983.

National Education Goals Panel. *Inventory of Academic Standards-Related Activities.* Washington, DC: National Education Goals Panel, 1995.

New York State Department of Education. *Preliminary Draft Framework for Career Development and Occupational Studies.* Albany, NY: New York State Department of Education, 1995.

Ravitch, Diane. *Debating the Future of American Education: Do We Need National Standards and Assessments?* Washington, DC: Brookings Institution, 1995.

For additional information, please contact:

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